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Catalpa catalpa (Linn.) Karsten.

Common *Catalpa*.

SYN.—*Bignonia catalpa* Linnæus, Sp. Pl., Ed. 1, II, 622 (1753).

Catalpa bignonioides Walter, Fl. Caroliniana, 64 (1788).

Catalpa cordifolia Moench. Meth., 464, (1794).

Catalpa ternifolia Cavenelles, Desc. Pl., 26, (1802).

Catalpa syringaefolia Sims, in Bot. Mag., XXVII, t. 1094, (1808).

Catalpa communis Du Mont de Courset, Bot. Cult., Ed. 2, III, 242, (1811).

Catalpa catalpa Karsten, Deutsch. Fl., 927 (1882).

COMMON NAMES.

Catalpa (Mass., R. I., Conn., N. Y., N. J., Pa., Del., W. Va., N. C., S. C., Ala., Ga., Fla., Miss., La., Ark., Ky., Mo., Ill., Kans., Nebr., Iowa, Mich., Wis., Ohio, Minn.).

Indian Bean (Mass., R. I., N. Y., N. J., Pa., N. C., Ill.).

Beantree (N. J., Del., Pa., Va., La., Nebr.).

Catawba (W. Va., Ala., Fla., Kans.).

Cigartree (R. I., N. J., Pa., W. Va., Mo., Ill., Wis., Iowa).

Catawba-tree (Del.).

Indian Cigartree (Pa.).

Smoking Bean (R. I.).

It remains for me to commend the typography and the uniform de-capitalization of specific names. It is a thoroughly good, modern piece of work.—CHARLES E. BESSEY.

Atlas und Grundriss der Bakteriologie und Lehrbuch der speciellen bakteriologischen Diagnostik. Von Prof. Dr. K. B. Lehmann und Dr. R. Neumann. Teil I, Atlas. Teil II, Text. Verlag von J. F. Lehmann, München, 1896.

This is a general work on bacteriology covering much the same ground as Flügge's *Die Mikroorganismen*, but in a very different manner. About 60 of the more common animal pathogenic and saprophytic forms have been studied more or less carefully and re-described according to a pre-established scheme, so that their behavior on all the common media may be readily compared. Many other species are briefly mentioned. These 60 species are figured in the Atlas, and Dr. Neumann, the artist, has been peculiarly happy in some of his representations, if not in all. Streak and stab cultures are given in their natural tints, usually on a black background, the agar or gelatin being represented as absent or black. The Atlas contains 63 colored plates, including more than 600 separate figures, most of which are original.

On table 28 there are two figs. X, one of which is undescribed. On tables 12, 19, 20, 55, etc., some of the figures have been accidentally transposed. Rights and lefts have also been transposed by the lithographer in some cases, as on table 37 II. There are occasional misprints as "stichcultur" for "strichcultur" in tables 41, 43, 44, 56, etc. More important is the fact that several scales of magnification are used in representation of the individual bacteria instead of the generally agreed upon magnification of $\times 1,000$. The Atlas is very attractive and cannot fail to be of much use. What of the text? This consists of 448 12 mo. pages on good paper, in clear Roman type easy to read, very systematically arranged, and with a good index at the end. The greater part of the book is devoted to the detailed description of the 60 species, and much of this part the reviewer has only dipped into here and there. How generally well this part has been done, or how many are the sins of omission and commission can be told only after the book has been used, or by those specially familiar with given organisms. It seems to be a good piece of work. Usually, each organism is described with reference to the following particulars: scientific name, common name, synonyms, literature, microscopic appearance, spores, motility, affinity for stains, need of oxygen, rapidity of growth, gelatine plates (*a.* natural size, *b.* magnified 50 times, 70 times, etc.), gelatin stab, agar plates (*a.* natural size, *b.* magnified 50 times, etc.) agar stab, agar streak, bouillon, milk, potato, conditions of spore formation, vitality, chemical activities, occurrence, nerve pathogeneis, nearly related species. This descriptive part of the book is preceded by a general discussion of the subject of bacteriology, which certainly deserves praise. In a space of 95 pages Dr. Lehmann has brought together the principal facts respecting the morphology and biology of this group of organisms. His statements are clear, exact, and in the main happy, whether or not one agrees with all of his propositions. One need not expect to find entire up-to-dateness in any book. No book can take the place of the current journals, least of all in a rapidly growing science, but this one is so very good that it deserves to find its way speedily into every laboratory. All the way through, in what is omitted as well as in what is brought forward prominently, there is not only evidence of a wide acquaintance with literature and of mature judgment, but also proof that the authors have become familiar with all the details of their subject by long experience in the laboratory. Following the descriptive portion of the book is a useful "Anhang" giving the briefest direction for the microscopic examination of bacteria, staining, preparation of culture media, etc. This will prove helpful to beginners. Finally at the end of the book is a folded sheet

giving in tabular form, so that it may be seen at a glance, some of the principal peculiarities of these 60 organisms, i. e., size, flagella, whether staining by Gram's method, aerobic or anaerobic, liquefaction of gelatin, growth in bouillon, growth in milk, spore formation, pigment on agar, formation of H_2S , indol reaction, amount of acid produced from grape sugar, gas production, growth in CO_2 and finally amount of growth in various media titrated as follows: (1) Neutral to phenolphthalein; (2) No. 1+10 cc. per litre of $\frac{N}{1}$ Na OH; (3) No. 1+10 cc. per litre of $\frac{N}{1}$ H_2 SO_4 ; (4) No. 1+20 cc. per litre of $\frac{N}{1}$ H_2 SO_4 .

Authors have used phenolphthalein for titrating media regularly since 1894 and recommend it for general use. "Jedenfalls kann der mittelst Phenolphthalein neutral hergestellte Nährboden unbedingt als Universalnährboden empfohlen werden." All the bacteria figured in the Atlas were grown on media slightly alkaline to phenolphthalein, and most of the 60 sorts bore the extra 10 cc. of alkali and the 10 and 20 cc. of acid. This seems rather surprising to the writer and certainly cannot be assumed to hold good for all species. My experience would lead me to select for a universal medium a grade of alkalinity considerably less than the zero or neutral point of phenolphthalein, i. e., one nearer the zero of the best neutral litmus paper, as I am satisfied that some species will not grow on media as alkaline as here recommended. In conclusion this book may also be commended to the physician and general reader who wishes to know something about bacteria without becoming swamped in details. Its remarkably low price (15 marks) puts it within the reach of everybody.—ERWIN F. SMITH.

Science Sketches.²—This small book of twelve reprints needs little comment. Those who read the sketches in *Popular Science Monthly* and elsewhere will doubtless desire to have them collected into one volume. It may be noted that the papers "Agassiz at Penekese," "The Fate of Ictidorum," "The Story of a Strange Land" and "How the Trout came to California" have taken the place of certain others in the first edition.—F. C. K.

Recent Papers Relating to Vertebrate Paleontology.³—The first paper below cited is a review by Dr. Baur, of Chicago, of a

² David Star Jordan, 2d Ed. A. C. McClurg & Co., Chicago, \$1.50.

³ Bemerkungen über die Phylogenie der Schildkröten, von G. Baur, *Anatom. Anzeiger*, XII, 24-25, 1896, p. 561. Jena.

On the Morphology of the Skull of the Pelycosauria and the Origin of the Mammals, by G. Baur and E. C. Case; *Anatomischer Anzeiger*, XIII, u. 4 & 5, 1897, p. 109. Jena.